A NEW SPECIES OF COCCIDIUM FROM *TAPHOZOUS MELANOPOGON* TEMMINEK (MAMMALIA: CHIROPTERA) FROM ANDAMAN ISLANDS

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Abstract

A new species of *Eimeria* (Protozoa: Eimeriidae) infesting the small intestine of a Chiroptera – *Taphozous melanopogon* Temminek, collected from Andaman Islands is described in this paper. The criteria for considering it as new species to science are given and these have been compared with the five species of *Eimeria* hitherto described from Chiropteran hosts. This seems to be the first record of a coccidium from a Chiropteran host in India.

Introduction

During a faunistic survey of Andaman Island in July–August, 1972, authors obtained a hitherto undescribed coccidium from a species of bat. This is described here as new. From bats five species of coccidia belonging to the genus *Eimeria* have been listed by Pellerdy (1965). Labbe (1893) was the first to report a coccidium from a bat (*Rhinolophus ferrumequinum*) and named it as *Coccidium viride*. Reichenow (1921) redescribed this species and placed it under *Eimeria*. Lavier (1924) described *E. hessei* from *Rhinolophus hipposideros* and in 1927 reported another species *E. dukei* from *Nyctinomus limbatus* and *N. pumilus*. Bray (1958) described *E. levinei* from *Tadarida bemmelini*. Mussaiev and Weissov (1961) reported *E. vespertilii* from *Vespertilio kuhlii*. The species dealt with in this paper is the first record in India from a Chiropteran host.

The type materials are deposited in the National Collection of Zoological Survey of India, Calcutta.

Material and Methods

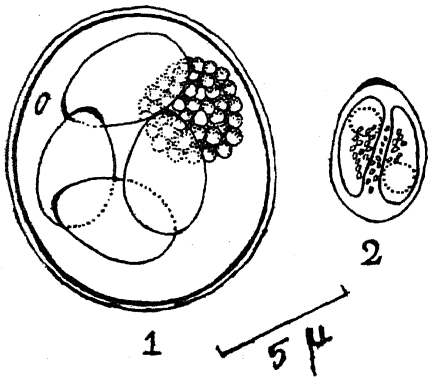
Twenty examples of *Cynopterus sphinx* and thirty examples of *Taphozous melanopogon* were examined for coccidial infection. However, only two

examples of *T. melanopogon* yielded parasites. The intestinal contents were examined in the fresh condition and for further observations it was kept in 2·5% Potassium dichromate solution. Camera lucida drawings were made in a uniform magnification, × 1,000. The measurements were taken with the aid of a calibrated ocular micrometer.

DESCRIPTION

Eimeria andamanensis sp. nov.

Both immature and mature oocysts (Fig. 1) are subspherical in shape measuring 12·50 to 16·5 μ in length (average 13·50 μ) and 8·50 to 10·5 μ in width (average 9·5 μ). Oocystic wall is double layered, the outer wall is thinner than the inner one and measures ·37 to ·50 μ in thickness. In natural light it is pinkish in colour. The zygotic mass is spherical, clear, highly refractile and concentrated at the centre. It measures 7·5 to 8·5 μ in diameter. Micropyle is present, oocystic residuum is massive having a diameter 4·5 to 5·5 μ and located on one side in fully matured oocyst. Sporocysts (Fig. 2) are broadly pyriform, sporocystic wall is double layered and both are very thin. Sporocyst measures 4·5 to 6·5 μ in length (average 5·25 μ) and 3·0 to 4·5 μ in width (average 3.75 μ). The shape index is 1·5. The anterior end of sporocyst is provided with a thick prominent area and devoid of any plug. Sporozoites are elongated; the anterior end is more pointed than the bluntly pointed posterior end. It measures 2·5 to 3·5 μ in length (average 3 μ) and 1·5 to 2·75 μ in width (average 1·5 μ) at the broader end. Sporozoites appear like shining elongated bodies within the sporocysts. The nucleus of the sporozoite is located at the posterior end and appears like a hyaline mass. The sporocystic



FIGS. 1–2. Fig. 1. Sporulated oocyst of *Eimeria andamanensis* sp. nov. Fig. 2. Sporocyst with fully developed sporozoites of *Eimeria andamanensis* sp. nov.

residuum is irregularly scattered inside the sporocysts and sometimes due to its enormous volume renders the observation of the sporozoite difficult.

Sporulation time 24–36 hrs.

Type Host: *Taphozous melanopogon* Temminek

Habitat : Small intestine

Type Locality: Haddo, Port Blair, Andaman Island (India). At present known from the type locality only

Date of coll.: 14-7-1972

Holotype. Z. S. I. Reg. No. Pt 1581

Remarks

Of the five species of *Eimeria* known from bats, the oocyst of *E. viridis* is having ovoid, pear-shaped and truncated forms, both *E. hessei* and *E. dukei* are round and ovoid but in *E. levinei*, it is ovoid. The oocyst of *E. vespertilii* is having round and sub-spherical forms which is closely allied to the new species described here but differs considerably in the following characters:

(1) Smaller oocyst, (2) Presence of a big oocystic residuum, (3) In having thinner, oocystic and sporocystic walls, (4) Difference in the sporulation time.

Therefore, the present species is described as *E. andamanensis* sp. nov. based on the geographical distribution of the same.

Diagnosis of *Eimeria andamanensis* sp. nov.

Oocyst subspherical, size ranging 12·50–16·50 μ × 8·50–10·5 μ (average 13·50 × 9·5 μ), wall double layered ranging ·37–·50 μ, inner one thicker, pinkish in colour in natural light; zygotic mass spherical, clear, highly refractile, occupies central position in immature oocyst; sporulation time 24–36 hrs. Four sporocysts, each broadly pyriform with two sporozoites encased in thin double layered wall; sporocyst ranges from 4·5–6·5 μ × 3–4·5 μ (average 5·25 × 3·75 μ); sporozoite shiny elongated body measuring 2·50–3·50 × 1·5–2·75 μ; sporocystic residuum irregularly scattered.

Infesting the small intestine of *Taphozous melanopogon* Temminek.

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